REMARKS

Applicants respectfully request reconsideration of this application. Claims 1-88 remain in this application. No new claims have been amended, added or canceled.

Rejections under 35 U.S.C. § 103(a)

Claims 1-4, 6-7, 11-12, 14, 16-17, 20, 24-27, 33, 35-36, 39, 43, 60, 65-67, 73-74, and 76-79 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho et al. ("A Novel Distributed Control Protocol in Dynamic Wavelength-Routed Optical Networks", IEEE Communications Magazine, November 2002) and Smith et al., U.S. Patent No. 7,171,124. Applicant does not admit that either Ho or Smith are prior art and reserves the right to swear behind these references at a later date. Nonetheless, Applicant respectfully submits that Ho and Smith does not disclose each and every element of the invention as claimed in claims 1-4, 6-7, 11-12, 14, 16-17, 20, 24-27, 33, 35-36, 39, 43, 60, 65-67, 73-74, and 76-79.

Ho discloses selecting an optical path for a source node from many available paths to different destination nodes in an optical network (Ho, Abstract, p.38). The source node is provided with a routing table that defines all possible paths to the different destinations nodes (Ho, p.39, 2nd column). The routing table is defined offline (Ho, p. 39, 2nd column). Assigning the proper path involves selecting the path and selecting the proper wavelength along the path (Ho, p. 38, 1st column). Because all of the routing between the source and destination nodes is predefined in the routing table, path selection just involves wavelength selection (Ho, p. 39, 2nd column). Wavelength selection selects the best lightpath between the source and destination nodes (Ho, p. 39, 2nd column). This is done by determining critical links (i.e. paths with high traffic), and broadcasting to other nodes to avoid the critical links during path selection (Ho, p. 40, 2nd column). Nevertheless, Ho does not disclose the organization of the routing database, other than the database contains paths between source and destination nodes.

Smith discloses a system that routes and switches information on a dense wavelength division multiplexing network (DWDM) path between a source and

destination node (Smith, Abstract). They system routes and switches information through multiple nodes in the network (Smith, Fig. 1, Col. 4, lines 13-22). Regenerating nodes ("regenerators") provide optical-electric-optical (OEO) wavelength conversion and/or regeneration in the network core (Smith, Col. 4, lines 34-36). The system further includes a network topology database to store topology data of the network (Smith, Col. 6, lines 65-66). The system finds a number of paths available between the source and destination node (Smith, Col. 6, lines 12-16). The system builds a search tree of these paths from the topology data stored in the database (Smith, Col. 6, lines 65-66). The system further groups the paths in the search tree between the same source and destination node by the number of regenerators on each path (Smith, Col. 6, lines 26-33). In particular, regenerator placement module groups the paths into 'm' sets by the number of 'k' regenerators that are on the path (Smith, Fig. 4A, step 63, Fig. 5B, Col. 10, lines 53-67). In the example illustrated by Fig. 5B, there is one set with one path having one regenerator (k=1), a second set of three paths with two regenerators (k=2), and a third set of one path having one regenerator (k=3) (Smith, Fig. 5B, Col. 10, lines 54-59). In addition, Smith discloses computing the costs of paths (Smith, Fig. 6B, Col. 13, lines 49-54). However, Smith does not disclose the organizational structure of the network topology database. Thus, Smith discloses organizing paths by the number of regenerators between the source and destination node.

Applicant respectfully submits that the combination of Ho and Smith do not teach or suggest Applicant's claims. The Examiner admits that Ho does not teach or suggest a database of available paths grouped by common destination node. The section cited by the Examiner as disclosing this element merely discloses organizing the paths in a search tree by the number of regenerators in the path (Smith, Fig. 5B) or organizing by path cost (Smith, Fig. 6B). Furthermore, Smith does not disclose the organizational structure of Smith's network topology database. Thus, neither Ho nor Smith teach or suggest a database of available paths grouped by common destination node.

For example, claim 1, as amended, requires "said optical network devices acting as access nodes each including a database representing available paths grouped by common destination nodes with costs from that access node to reachable destination

nodes, each of said paths having associated with it in said database the wavelengths available on that path."

Claim 14, as amended, requires "... a database to store a representation of available paths grouped by common destination nodes with costs from the access node to reachable destinations organized by said reachable destinations ...".

Claim 33, as amended, requires "...a database, to be built responsive to receiving response messages carrying determinations of possible paths having the access node as the source node and meeting the set of connectivity constraints, to store available end to end paths grouped by common destination nodes with costs from the access node to reachable destination nodes organized by said reachable destination nodes. ...".

Claim 60 requires "a database to store available paths with costs from that access node to reachable destination nodes in said database, wherein each of said available paths is a series of nodes and interconnecting links in said optical network over which that path travel, said database to store said available paths grouped by common destination nodes and sorted in each group at least in part by cost, each of said paths having associated with it in said database the wavelengths available on that path."

Claim 66 requires "...accessing a database storing available paths with costs from the access node to reachable destination nodes in said optical network, wherein each path is a sequence of nodes and interconnecting links starting at said access node and ending at one of said reachable destination nodes, said available paths being stored grouped by common destination nodes and sorted in each group at least in part by the cost, each of said paths having associated with it in said database the wavelengths available on that path ..."

Claim 70, as amended, requires "...locating a reachable destination node in a structure of a database, wherein said structure stores a non-duplicative set of the plurality of destination nodes in the optical network reachable with available paths from the access node grouped by common destination node, wherein said database associates to each of said plurality of destination nodes in the structure each of the sequences of nodes and interconnecting links of those of the available paths that lead to that destination node sort at least in part by cost, each such available path having associated to it the set of one or more available wavelengths along that path...".

Claim 76 requires "... storing in a database the collected end to end paths grouped by common destination nodes ...".

The above quoted limitations are not described or suggested by Ho and/or Smith. While there are various uses for the invention as claimed, several such uses are discussed at Figure 3 and paragraph 0078. Thus, while the invention is not limited to the uses discussed on these pages, it should be understood that Ho and Smith do not enable these uses and the above quoted limitations do.

For at least these reasons, Applicant respectfully submits that the claims discussed above are allowable. The Applicant respectfully submits that the additional dependant claims are allowable for at least the reason that they are dependent on an allowable independent claim.

Claims 8-10, 21-23, 40-42, 45-51, 53-55, 62-64, 68-69, 71-72, 80-86, and 88 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Smith, and Ho et al., ("A Framework for Service-Guaranteed Shared Protection in WDM Mesh Networks", IEEE Communications Magazine, February 2002) ("Ho2"). Applicant respectfully submits that the combination does not teach each and every element of the invention as claimed in claims 8-10, 21-23, 40-42, 45-51, 53-55, 62-64, 68-69, 71-72, 80-86, and 88.

Ho2 discloses a framework for end-to-end service-guaranteed shared protection in dynamic wavelength division (WDM) mesh networks (Ho2, Abstract). Each working path is divided into several overlapped protection domains, where each protection domain has a working and protection path pair (Ho2, p.99, 2nd column). Restoration of paths is done within a protection domain when needed instead of using a path-long protection path (Ho2, p. 99, 2nd column). Nevertheless, Ho2 does not disclose the organization of the databases used to implement this domain-based protection scheme.

Applicant respectfully submits that the combination of the access nodes of Ho and Ho2 would not teach or suggest Applicant's claims 8-10, 21-23, 40-42, 45-51, 53-55, 62-64, 68-69, 71-72, 80-86, and 88. Independent claims 45 and 84 are directed towards a database that stores available paths grouped by common destination. As per above, neither Ho nor Smith teach or suggest the organization of the routing database by common destination node. Furthermore, because Ho2 does not disclose the database

organization, Ho2 cannot teach or suggest database that stores available paths grouped by common destination.

For example, claim 45, as amended requires "...a database organized by the destination nodes of the available paths from the access node to others of said access nodes and grouped by common destination node, each such destination node having associated to it those of the available paths that lead to that destination node, each such available path having associated to it a path channel set that includes one or more wavelengths common to all of the interconnecting links of that path..."

Claim 84 requires, as amended, requires "...selecting, from a database storing available paths with costs from the access node to reachable destinations organized by said reachable destinations and grouped by common destination, a different one of a set of the available paths associated with the same destination node as a previously selected path, wherein each of said available paths is represented in said database by the series of two or more nodes and the interconnecting links over which that path travels...".

The above quoted limitations are not described or suggested by Ho, Smith, and/or Ho2. While there are various uses for the invention as claimed, several such uses are discussed at Figure 3 and paragraph 0078. Thus, while the invention is not limited to the uses discussed on these pages, it should be understood that Ho, Smith, and/or Ho2 do not enable these uses and the above quoted limitations do.

For at least these reasons, Applicant respectfully submits that the claims discussed above are allowable. The Applicant respectfully submits that the additional dependant claims are allowable for at least the reason that they are dependent on an allowable independent claim.

Claims 5, 18-19, 34, and 37 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Smith, and Deo et al., "Graph Theory with Applications to Engineering and Computer Science"). Claims 13 and 28 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Smith, and Jukan et al. ("Constraint-Based Path Selection Methods for On-Demand Provisioning in WDM Networks", IEEE INFOCOM, 2002). Claims 30, 32, and 44 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Smith, and Moy ("OSPF Version 2", RFC 2328, IETF, April 1998). Claim

31 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Smith, and Pulkkinen et al., U.S. Patent Publication No. 2003/0172356. Claims 52 and 59 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Ho2, Smith, and Deo. Claim 58 stands rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Ho2, Smith, and Moy. Claim 56 stands rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Ho2, Smith, and Jukan. Claims 15 and 61 stands rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Deo, Smith, and Date ("An Introduction to Database Systems" by C.J. Date, Addison-Wesley 1986). Claim 75 stands rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Ho2, Smith, and Shami ("Performance Evaluation of Two GMPLS-Based Distributed Control and Management Protocols for Dynamic Lightpath Provisioning in Future IP Networks", IEEE, 2002). Claim 87 stands rejected under 35 U.S.C. § 103(a) as being obvious in view of Ho, Ho2, Smith, and Shami.

All of the above claims depend from one of the above identified independent claims. It is respectfully submitted that the above identified cited references, individually or in combination, fail to disclose or suggest the limitations set forth the above independent claims.

SUMMARY

Applicant respectfully submits that the rejections have been overcome by the amendments and remarks, and that the Claims as amended are now in condition for allowance. Accordingly, Applicant respectfully requests the rejections be withdrawn and the Claims as amended be allowed.

Invitation for a telephone interview

The Examiner is invited to call the undersigned at 408-720-8300 if there remains any issue with allowance of this case.

Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Date: 7/30/07

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